Dementia and Cognition

This document contains all abstracts for publications relating to dementia and cognition from October 2019 through to December 2019. These abstracts have been sourced from SafetyLit.org and include only those relevant to falls prevention.

SafetyLit provides weekly abstracts of peer reviewed articles from researchers who work in the more than 30 distinct professional disciplines relevant to preventing and researching unintentional injuries, violence, and self-harm. Each week citations and summaries of about 400 articles and reports are included in a PDF document or through an RSS subscription.

Contents:

Dementia

An intervention to improve outcomes of falls in dementia: the DIFRID mixed-methods feasibility study

Allan LM, Wheatley A, Smith A, Flynn E, Homer T, Robalino S, Beyer FR, Fox C, Howel D, Barber R, Connolly JA, Robinson L, Parry SW, Rochester L, Corner L, Bamford C. Health Technol. Assess. 2019; 23(59): 1-208.

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DOI

10.3310/hta23590

PMID

31661058

Abstract

BACKGROUND: Fall-related injuries are a significant cause of morbidity and mortality in people with dementia. There is presently little evidence to guide the management of such injuries, and yet there are potentially substantial benefits to be gained if the outcomes of these injuries could be improved. This study aimed to design an appropriate new health-care intervention for people with dementia following a fall and to assess the feasibility of its delivery in the UK NHS.

OBJECTIVES: To determine whether or not it is possible to design an intervention to improve outcomes of falls in dementia, to investigate the feasibility and acceptability of the DIFRID (Developing an Intervention for Fall related Injuries in Dementia) intervention and to investigate the feasibility of a future randomised controlled trial and the data collection tools needed to evaluate both the effectiveness and the cost-effectiveness of the DIFRID intervention.

DESIGN: This was a mixed-methods feasibility study. A systematic review (using Cochrane methodology) and realist review [using Realist And Meta-narrative Evidence Syntheses: Evolving Standards (RAMESES) methodology] explored the existing evidence base and developed programme theories. Searches were carried out in November 2015 (updated in January 2018) for effectiveness studies and in August 2016 for economic studies. A prospective observational study identified service use via participant diary completion. Qualitative methods (semistructured interviews, focus groups and observation) were used to explore current practice, stakeholder perspectives of the health and social care needs of people with dementia following a fall, ideas for intervention and barriers to and facilitators of change. Each of the resulting data sets informed intervention development via Delphi consensus methods. Finally, a single-arm feasibility study with embedded process

evaluation was conducted. SETTING: This study was set in the community. PARTICIPANTS: The participants were (1) people with dementia presenting with falls necessitating health-care attention in each setting (primary care, the community and secondary care) at three sites and their carers, (2) professionals delivering the intervention, who were responsible for training and supervision and who were members of the intervention team, (3) professionals responsible for approaching and recruiting participants and (4) carers of participants with dementia. INTERVENTIONS: This was a complex multidisciplinary therapy intervention. Physiotherapists, occupational therapists and support workers delivered up to 22 sessions of tailored activities in the home or local area of the person with dementia over a period of 12 weeks. MAIN OUTCOME MEASURES: (1) Assessment of feasibility of study procedures; (2) assessment of the acceptability, feasibility and fidelity of intervention components; and (3) assessment of the suitability and acceptability of outcome measures for people with dementia and their carers (number of falls, quality of life, fear of falling, activities of daily living, goal-setting, health-care utilisation and carer burden).

RESULTS: A multidisciplinary intervention delivered in the homes of people with dementia was designed based on qualitative work, realist review and recommendations of the consensus panel. The intervention was delivered to 11 people with dementia. The study suggested that the intervention is both feasible and acceptable to stakeholders. A number of modifications were recommended to address some of the issues arising during feasibility testing. The measurement of outcome measures was successful.

CONCLUSIONS: The study has highlighted the feasibility of delivering a creative, tailored, individual approach to intervention for people with dementia following a fall. Although the intervention required greater investment of time than usual practice, many staff valued the opportunity to work more closely with people with dementia and their carers. We conclude that further research is now needed to refine this intervention in the context of a pilot randomised controlled trial. TRIAL REGISTRATION: Current Controlled Trials ISRCTN41760734 and PROSPERO CRD42016029565. FUNDING: This project was funded by the National Institute for Health Research (NIHR) Health Technology Assessment programme and will be published in full in Health Technology Assessment; Vol. 23, No. 59. See the NIHR Journals Library website for further project information.

Language: en

Keywords

Accidental Falls; Dementia; Health Services Needs and Demand; Interventions; Pilots; Prospective Studies

Review of gait, cognition, and fall risks with implications for fall prevention in older adults with dementia

Zhang W, Low LF, Schwenk M, Mills N, Gwynn JD, Clemson L. Dement. Geriatr. Cogn. Disord. 2019; ePub(ePub): ePub.

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PMID 31743907

Abstract

BACKGROUND: Older people with cognitive impairment are at increased risk of falls; however, fall prevention strategies have limited success in this population. The aim of this paper is to review the literature to inform a theoretical framework for fall prevention in older adults with dementia. SUMMARY: A narrative review was conducted on fall risk factors in people with cognitive impairment, the relationship between cognition and gait, and their joint impact on the risk of falls. This was used to develop a theoretical framework for fall prevention for people with dementia. Executive function and motor function are closely related as they share neuroanatomy. This close relationship has been confirmed by observational studies including neuroimaging and intervention studies. Executive function is the cognitive domain most commonly associated with gait dysfunction. Attention, sensory integration, and motor planning are the sub-domains of executive function associated with risk of falls through gait dysfunction, whereas cognitive flexibility, judgement, and inhibitory control affect risk of falls through risk-taking behaviour. Key Messages: Gait, cognition, and falls are closely related. The comorbidity and interaction between gait abnormality and cognitive impairment may underpin the high prevalence of falls in older adults with dementia. Gait assessment and cognitive assessment, particularly executive function, should be integrated in fall risk screening. Assessment results should be interpreted and utilised using a multidisciplinary approach; specific strategies such as customised gait training and behavioural modulation should be considered as part of falls prevention for people with dementia.

Language: en

Keywords

Cognitive impairment; Executive function; Falls prevention; Risk factors; Theoretical framework

Feasibility and accuracy of different methods for collecting data on falls among older people with dementia

Adamczewska N, Vassallo M, Thomas PW, Thomas S, Barrado-Martín Y, Nyman SR. Alzheimer Dis. Assoc. Disord. 2019; ePub(ePub): ePub.

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10.1097/WAD.0000000000000364

PMID

31789633

Abstract

This study compared different methods for collecting data on falls among people with dementia to identify which is most feasible and accurate. Eighty-three dyads, comprised of a community-dwelling person with dementia and their informal carer, participated in the TAi ChI for people with demenTia (TACIT) trial. Falls were collected prospectively over 6 months using monthly calendars, weekly and monthly telephone interviews, and 3-monthly telephone interviews with the carer. Unique falls identified across the reporting methods were combined, and this total was compared against each reporting method in isolation and combinations. A higher frequency of falls indicated greater accuracy. Falls data collection was most feasible with weekly telephone interviews (84%), and most accurate with the combination of weekly telephone interviews with monthly calendars (96%). For the greatest completeness and accuracy of falls data with community-dwelling people with dementia, researchers should use both weekly telephone interviews and monthly calendars.

Language: en

Cognition

Cognitive performances better identify fallers than mobility assessment among older adults with fear of falling

Langeard A, Desjardins-Crépeau L, Lemay M, Payette MC, Bherer L, Grenier S. Aging Clin. Exp. Res. 2019; ePub(ePub): ePub.

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DOI

10.1007/s40520-019-01338-9

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31576516

Abstract

BACKGROUND: Half of the people with fear of falling (FoF) are non-fallers, and the reason why some people considered non-fallers are afraid of falling is unknown, but reduced mobility or cognition, or both concurrently must be considered as potential risk factors.

AIM: The study aimed to determine if mobility and/or cognitive abilities could identify people with a history of falls in older adults with FoF.

METHODS: Twenty-six older adults with FoF participated in this study. Full cognitive and mobility assessments were performed assessing global cognitive impairments (MoCA score < 26), executive functions, memory, processing speed, visuospatial skills, mobility impairment (TUG time > 13.5 s), gait, balance and physical capacity. Information about falls occurring during the year prior to the inclusion was collected. Logistic regression analyses were performed to explore the association between falls and cognitive and mobility abilities.

RESULTS: No significant differences in age, sex, level of education or body mass index were detected between fallers and non-fallers. Cognitive impairments (MoCA score < 26) distinguished between fallers and non-fallers ($p = 0.038$; $R^2 = 0.247$). Among specific cognitive functions, visuospatial skills distinguished between fallers and non-fallers ($p = 0.027$; $R^2 = 0.258$). Mobility impairments (TUG time > 13.5 s), gait, balance and physical capacity were not related to past falls.

DISCUSSION/CONCLUSION: In older adults with FoF, global cognitive deficits detected by the MoCA are important factors related to falls and more particularly visuospatial skills seem to be among the most implicated functions. These functions could be targeted in multifactorial interventions.

Language: en

Keywords

Aged 65 and over; Balance; Composite scores; Gait; Visuospatial skills

Measuring subtle cognitive decline to predict fall risks

Hensley LK. Nursing 2019; 49(10): 60-63.

Affiliation

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DOI

10.1097/01.NURSE.0000580720.25145.2b

PMID

31568086

Abstract

[Abstract unavailable]

Language: en

Occupational therapist use of the 'Timed Up and Go' test in a memory clinic to compare performance between cognitive diagnoses and screen for falls risk

Harper KJ, Riley V, Petta A, Jacques A, Spendier N, Ingram K. Aust. Occup. Ther. J. 2019; ePub(ePub): ePub.

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10.1111/1440-1630.12617

PMID

31609001

Abstract

INTRODUCTION: Occupational therapists assess older patients attending Memory Clinics to address multiple facets, including memory, activities of daily living function, mobility and falls risk. Identifying deficits in motor and functional abilities represents a crucial and necessary component of cognitive diagnosis. The aim of this research was to compare performance on the TUG between patients with normal (NC), mild cognitive impairment (MCI) and dementia.

METHODS: A prospective single-blind single-centre cohort study was conducted in a Memory Clinic. Patients underwent comprehensive medical assessment, including the Mini Mental Status Examination (MMSE) to determine a cognitive diagnosis. The occupational therapist, blinded to any diagnosis, completed the TUG.

RESULTS: A total of 158 patients aged 60 years and older were recruited. The average TUG was 15.4 s, which was similar between men and women ($p = .87$). A TUG greater than ≥14 s was significantly associated with the use of a walking aid ($p \leq .001$). The TUG increased with age and a slower TUG was associated with a greater number of previous falls ($p = .023$). The TUG did not significantly differ between patients with dementia, MCI and NC ($p = .095$). However, there was a significant difference comparing patients with NC and MCI (14.3 s) to those with dementia (16.4 s) ($p = .048$). There was a significant weak negative correlation between the MMSE and the TUG of -0.253 ($p = .003$). Univariate models showed that a patient's ability to ambulate independently contributed to 33% of the variance in the TUG, whereas previous falls contributed to 4%, highlighting the importance of physical function and intervention to target this.

CONCLUSION: A simple TUG test should be considered for use by occupational therapists in a Memory Clinic to screen patients at risk of falling. Patients diagnosed with dementia have a significantly slower TUG. However, this tool cannot assist with the early detection of patients with MCI.

Language: en

Keywords accidental falls; cognition; memory; occupational therapy; walking

Effectiveness of combined cognitive and physical interventions to enhance functioning in older adults with mild cognitive impairment: a systematic review of randomized controlled trials

Yang C, Moore A, Mpofu E, Dorstyn D, Li Q, Yin C. Gerontologist 2019; ePub(ePub): ePub.

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Abstract

BACKGROUND AND OBJECTIVES: Cognitive training delivered in conjunction with physical activity, may help to optimize aging and delay or prevent dementia in individuals with mild cognitive impairment (MCI). However, their efficacy is less well studied compared to pharmaceutical treatments. This systematic review synthesizes the emerging evidence on combined cognitive-physical interventions for enhancing functioning in older adults with MCI, with implications for practice and research. RESEARCH DESIGN AND METHODS: We searched the PubMed, PsycINFO, Ageline, Medline, Web of Science and ProQuest databases, and hand-searched articles published between July 2013 and November 2018. Only randomized controlled trials which incorporated cognitive and physical components targeted to individuals with MCI over the age of 50 were eligible. Our search yielded 10 eligible, independent articles.

RESULTS: Intervention participants with MCI self-reported, or demonstrated, improved functioning across a range of cognitive (global cognitive function, executive function, processing speed, memory, attention, mood, emotion, motivation, brain cortex, orientation), and physical (gait, balance, mobility) outcomes. Interventions which combined cognitive-physical training were comparable to those which isolated these same elements, in terms of their effects on executive function, processing speed, attention, mood, and cardiorespiratory fitness.

DISCUSSION AND IMPLICATIONS: There is preliminary evidence to support the positive effects of multicomponent interventions to improve cognitive-motor abilities in older adults at risk of developing dementia. The strength of this research evidence is, however, limited. Longitudinal studies are needed to determine whether these effects are maintained over time. The optimal intervention intensity and length also need to be established.

Language: en

Keywords

Aged; Cognition; Dementia; Exercise

Asymptomatic carotid stenosis is associated with mobility and cognitive dysfunction and heightens falls in older adults

Gray VL, Goldberg AP, Rogers MW, Anthony L, Terrin ML, Guralnik JM, Blackwelder WC, Lam DFH, Sikdar S, Lal BK. J. Vasc. Surg. 2019; ePub(ePub): ePub.

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DOI 10.1016/j.jvs.2019.09.020 **PMID** 31699511

Abstract

BACKGROUND: Atherosclerosis of the carotid bifurcation with plaque formation causes asymptomatic carotid artery stenosis (ACAS), which may also be associated with cerebral hypoperfusion. Cerebral hypoperfusion adversely affects multiple aspects of mobility and cognition. This study tests the hypothesis that community-dwelling older adults with a 50% or greater diameter-reducing ACAS will have mobility and cognitive impairments that heighten their risk for falls.

METHODS: Eighty community-dwelling adults completed a mobility assessment (Short Physical Performance Battery, Berg Balance Scale, Four Square Step Test, Dynamic Gait Index, Timed Up and Go, and gait speed), self-reported physical function (Activities-Specific Balance Confidence, SF-12 Physical Function Component), and cognitive tests (Mini-Mental State Examination). Falls were recorded for the past 6 months. Standardized carotid ultrasound examination classified participants into no stenosis (<50% diameter reduction) (n = 54), moderate stenosis (50%-69%) (n = 17), and high-grade stenosis (70%-99%) (n = 9) groups. Linear and logistic regression analyses determined the associations between these measures and the degree of stenosis (three groups).

RESULTS: Logistic regression analysis showed their degree of stenosis was associated with reductions in mobility (Short Physical Performance Battery [P =.008], Berg Balance Scale [P =.0008], Four Square Step Test [P =.005], DGI [P =.0001], TUG [P =.0004], gait speed [P =.02]), perceived physical function (ABC [P <.0001], SF-12 Physical Function Component [P <.0001]), and cognition (MMSE [P =.003]). Adults with moderate- and high-grade stenosis had a greater incidence of falls compared with those without stenosis (relative risk, 2.86; P =.01).

RESULTS remained unchanged after adjustment for age, sex and cardiovascular risk factors.

CONCLUSIONS: ACAS is associated with impaired mobility and cognition that are accompanied with increased fall risk. These impairments increased with worsening severity.

Language: en

Keywords Asymptomatic carotid artery stenosis; Balance; Cognition; Falls; Physical function